21. The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a native PLB protein.

22. The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a PLB protein with mutations.

23. The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a truncated PLB protein.

REMARKS

The Applicants thank the Examiner for her careful analysis of the claims and request that the Examiner reconsider her restriction of the various versions of phospholamban into separate species. The Applicants have amended the claims as set forth above so as to recite the claims of Group I with what the Applicants submit should be considered a single species of chemical constructions as they all have a single structural feature, being proteins, and can be made by a single method (e.g. chemical synthesis, recombinant methods).

In regard to restrictions of Markush groups, the MPEP states:

In specific reference to Markush groups it states:

> If the members of the Markush group are sufficiently few in number or so closely related that a search and examination of the entire claim can be made without serious burden, the Examiner must examine all of the members of the Markush group in the claim on the merits, even though they are directed to independent and distinct inventions. In such a case, the Examiner will not follow the procedure described below and will not require restriction. (MPEP 803.02)

The MPEP then discusses the requirement for structural and functional unity to be considered a proper Markush group. Although the different phospholambans have now been segregated into different independent claims from the previous single Markush group to allow for a proper response to be made to the restriction requirement,

they could form a proper Markush group as they share a common utility, treating heart failure, and they share a substantial structural feature disclosed as being essential to that unity. This unity can be most readily observed by reviewing the sequences 1-6 and 8 in the sequence listing. Sequences 2-5 are identical to sequence 1 except at a single amino acid in the sequence out of 52. Sequence 6 contains two point mutations. Sequence 8 is completely contained within sequence 1. The Applicants submit that this constitutes sufficient structural unity to be considered a single invention and request that the Examiner consider all of the phospholambans as now claimed in the newly added independent claims be considered as a single species.

In section 803, the MPEP it states:

> Under the statute an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and they are either independent (MPEP §806.04-§806.04(i)) or distinct (MPEP §806.5-806.5(i)).
>
> If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.

The Applicants submit that as the various forms of PLB would not be sufficient to support separate patents as mutant and truncated forms of PLB were known prior to the date of the instant application as taught in the specification. Moreover, as the native, mutant and truncated forms of PLB are taught to function in the same method, they would not support independent inventions. The Applicants submit that both native and modified forms of proteins are frequently considered as a single invention. Finally, the Applicants submit that Examination of all versions of PLB would not constitute an undue burden on the Examiner and request that they be considered as a single species. Therefore, the Applicants request rejoinder of the species.

If the Examiner will not consider the native, mutant and truncated forms of PLB to be a single species, mutant PLB is elected.

By this election, and in accordance with 37 C.F.R. § 1.142(b), the claims of Group II and the non-elected species are withdrawn. Applicants reserve the right to file

a Divisional application on the claims of Group II and Claims 6-11 and the non elected species of the claims of Group I.

FEES

It is believed that there is no fee due with this response. However, if a fee is due, the Commissioner is entitled to charge Deposit account 02-4070 referencing case number 6627-PA9025.

Respectfully submitted,

Dated: March 12, 2003

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Docket No.: 6627-PA9025

VERSION OF CLAIMS WITH AMENDMENTS SHOWN

1. (Amended) A method for treatment of heart failure comprising inducing phospholamban deficiency, wherein an exogenous phospholamban (PLB) protein induces phospholamban deficiency.

4. (Amended) The method for treatment of heart failure of claim 19 [3], wherein the mutations of PLB comprise point mutations [of PLB].

12. (Amended) A method for treatment of heart failure comprising enhancement of cardiac contractility by inhibition of PLB-sarcoplasmic reticulum calcium ATPase (SERCA2a) interaction wherein an exogenous PLB protein is used to inhibit interaction between PLB and SERCA2a.

16. (Amended) The method of claim 22 [12], wherein the mutations of PLB comprise point mutations of PLB.

18. (New) The method for treatment of heart failure of claim 1, wherein the exogenous PLB protein comprises a native PLB protein.

19. (New) The method for treatment of heart failure of claim 1, wherein the exogenous PLB protein comprises a PLB protein with mutations.

20. (New) The method for treatment of heart failure of claim 1, wherein the exogenous PLB protein comprises a truncated PLB protein.

21. (New) The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a native PLB protein.

22. (New) The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a PLB protein with mutations.

23. (New) The method for treatment of heart failure of claim 12, wherein the exogenous PLB protein comprises a truncated PLB protein.